

PATENT
P54757RE2**REMARKS**

This paper is in response to the fifth, non-final Office action mailed on the 18th of November 2005 (Paper No. 20051109). Re-examination and reconsideration of the rejections are respectfully requested.

Office Interview

An Office interview was held on Tuesday, the 23rd of August 2005 with the Supervisory Primary Examiner and the Special Program Examiner, and Applicant's undersigned attorney. The several courtesies extended to Applicant by the Supervisory Primary Examiner and the Special Program Examiner, are noted with appreciation.

In accordance with 37 CFR §1.133(b), the "reasons presented at the interview as warranting favorable action" are once again set forth in the follow paragraphs.

Status of the Claims

Claims 1 through 54 are pending in the application. Claims 1 through 15 are original claims, and claims 16 through 54 were previously added by amendment.

Rejection of Claims 32, 50 and 51 Under Second Paragraph Of 35 U.S.C. §112

Claims 32, 50 and 51 had been rejected in Paper No. 20050510 under the second paragraph of 35 U.S.C. §112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as invention. Applicant respectfully notes the withdrawal of this rejection in Paper No. 20051108.

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P54757RE2**Objection to the Specification**

The specification is objected to, under 37 C.F.R. §1.75(d)(1) and MPEP § 608.01(o), as failing to provide proper antecedent basis for the claimed subject matter. This objection is unfounded, is improper and should be withdrawn.

1. The Examining Staff Has Failed To Consider The Clear Support And Antecedent Basis For The Claims That Is Set Forth In Applicant's Originally Filed Specification

Specifically, the Examiner states that the specification fails to describe,

“a controller regulating movement of said head based on at least one of said first data address mark and said second data address mark.”¹

37 CFR §1.75(d)(1) states that,

“the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertained by reference to the description.”

Here, the Examining staff has failed to identify any term or any phrase as lacking either “clear support” or “antecedent basis.” Second, the Examining staff has failed to identify any inability to ascertain the meaning of the cited passage of the claims. In short, this objection fails to comply with the requirements for completeness mandated by 37 CFR §1.104(a), (b) and (c); clarification in subsequent, non-final correspondence is respectfully requested.

¹ Claim 32, lines 5 and 6; claim 50, lines 5 and 6; claim 51, lines 4 and 5; and claim 52, lines 5 and 6.

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2. The Examining Staff Has Failed To Consider The Clear Support And Antecedent Basis For The Claims That Is Set Forth In Applicant's Originally Filed Specification For Each Element Set Forth In Claims And For The Relationship Between Those Elements Defined By Those Claims

In the objection, the Examining staff questions whether Applicant's specification fails to describe,

"a controller regulating movement of said head based on at least one of said first data address mark and said second data address mark."²

As is demonstrated by the following excerpts taken from Applicant's originally filed specification, that specification provides either "clear support" or "antecedent basis" for both of the elements introduced by this paragraph of the claims and for the relationship that exists between these elements. More specifically, Applicant's specification expressly states that,

"a high density hard disk drive HDD constructed according to the principles of the present invention .. includes, for example, ... corresponding four transducer heads 4, a transducer head assembly 6 in an E-shape having actuator arms 5 each for supporting a respective pair of transducer heads 4, a preamplifier 8, a read/write channel circuit 10, an analog-to-digital (A/D) converter 12, a track information detector 13, a micro-controller 14, a digital-to-analog (D/C) converter 16, a voice coil motor (VCM) driver 18, a voice coil motor 20 ... and a disk data controller (DDC) 28."³

Applicant then teaches:

"Preamplifier 8 is electrically connected to the transducer head assembly 6 for amplifying a predetermined signal read out from the disk 2 using the transducer head 4 and transmitting the

² Claim 32, lines 5 and 6; claim 50, lines 5 and 6; claim 51, lines 4 and 5; and claim 52, lines 5 and 6.

³ Son' 387, column 4, lines 53-68 and column 5, lines 1-3.

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amplified signal to the read/write channel circuit 10.”⁴

Applicant's original specification additionally teaches that:

“Read/write channel circuit 10 is connected between the preamplifier 8 and the DDC 28 for decoding data pulses from an input signal received from the preamplifier 8 to generate read/out data RDATA ...”⁵

The specification continues to explain that:

“Track information detector 13 is connected between the read/write channel circuit 10 and the micro-controller 14 for detecting from the RDATA, a track number for the current position of the transducer head 4 and providing the detected data to the micro-controller 14. The DDC 28 is controlled by the micro-controller 14 to record the data received from a host computer via the read/write channel circuit 10 and the preamplifier 8 or to transmit the data read out from the disk 2 to the host computer.”⁶

The specification further explains that:

“Micro-controller 14 controls the DDC 28 according to a command received from the host computer to search a track and position of the transducer head. In doing so, the micro-controller 14 uses the track number and the PES input from the track information detector 13 and the A/D converter 12, respectively. The D/A converter 16 is connected to the micro-controller 14 for converting the digital signal output from the micro-controller 14 into an analog signal for controlling the position of the transducer heads 4. A VCM driver 18 generates a driving current for driving a VCM 20 according to the analog signal input from the D/A converter 16. The VCM 20 drives the transducer heads 4 to move in a radial direction of the disk 2 corresponding to the level of the

⁴ Son' 387, column 5, lines 4-8.

⁵ Son' 387, column 5, lines 14-19.

⁶ Son' 387, column 5, lines 29-37.

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driving current input from the VCM driver 18.”¹

Applicant’s original specification states that,

“[t]he two data address marks are respectively distinguished by using different patterns, and is discriminated by the micro-controller 14.”²

With a data field, such as may be used with a headerless servo recording system, the:

“data address mark informs that the data is started and provides necessary synchronization when the magnetic disk driving apparatus reads the data. ... if there is occurrence of a defect in the data address mark area, it is difficult if not impossible to restore the damaged data address mark. As a result, since the data address mark is not detected, data positioned at the data area following the data address cannot be normally accessed.”³

It may be seen from the foregoing litany of excerpts from the “description” set forth in Applicant’s originally filed application, that not only has the Examining staff failed to identify any term or any phrase as lacking either “clear support” or lacking “antecedent basis” in Applicant’s original specification, but that the original specification fully complies with 37 CFR §1.75(d)(1) by describing a structure that regulates movement of one, or more heads, and a structure that regulates movement of one, or more heads based upon one or more of the first data address mark and the second data address mark, provides either “clear support” or “antecedent basis” for both of the elements introduced by this paragraph of the claims and for the relationship that exists between these elements because absent regulation of the movement

¹ Son’ 387, column 5, lines 38-51.

² Son ‘387, column 5, lines 64-67.

³ Son ‘387, column 4, lines 35-51.

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based upon the first data address mark and the second data address mark, reading of data sought by the host computer is problematical, as is explained by Applicant's original specification.

3. The Examining Staff Has Failed To Consider The Entirety Of Clear Support And Antecedent Basis For The Claims That Is Set Forth In Applicant's Originally Filed Specification

Applicant's original specification describes more than a single step of regulating movement of a head. In particular, Applicant's specification states that,

"the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertained by reference to the description."

The Examining staff is respectfully invited to consider the three operational scenarios invoking the structure described in the foregoing excerpts taken from the written description of Applicant's original specification. In the first of the two favorable scenarios,

"[d]uring the read operation of each section, when only one byte of data address mark is detected among 2 bytes of data address marks, it is regarded as an effective data address mark. That is, if the first data address mark is normally detected, the second data address mark of one byte is skipped and the following information is regarded as data."¹

The first favorable scenario expressly contemplates movement of the head 4, and in the larger scheme of the operation of the disk drive, movement of the magnetic head 4 must continue after reading of the first data address mark if, for no other reason than to pass over (or "skip") the second data address mark and place head 4 in a position relative to the disk so that head 4 is

¹ Son '387, column 6, lines 5-11.

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able to read the data stored after the second data address mark; regulation of that movement by, *inter alii*, a component such as a controller 14. In consideration of this first scenario, the Examining staff is respectfully requested to contemplate whether regulation of the movement of head 4 to accommodate movement of head 4 to a position which would allow head 4 to read the first data address mark would constitute "regulating movement of said head based on at least one of said first data address mark and said second data address mark"? ¹

In the second favorable scenario,

"[d]uring the read operation of each section, when only one byte of data address mark is detected among 2 bytes of data address marks, it is regarded as an effective data address mark. That is, if the first data address mark is normally detected, the second data address mark of one byte is skipped and the following information is regarded as data. If the first address mark has a defect, however, the second data address mark is detected." ²

In other words, when difficulty is encountered in detecting the first address mark, one determination must be made of whether "the first data address mark" has been normally detected and a second determination must be made to attempt to detect the second address mark; this second favorable scenario expressly contemplates movement of the head 4, and in the larger scheme for operation of the disk drive, movement of the magnetic head 4 must continue after reading of the second data address mark if, for no other reason than to position head 4 in a position relative to the disk so that head 4 is able to read the data stored after the second data

¹ As an aside, it may be noted that the "skipping" of the second data address mark may be accomplished in more than one way, and as Applicant's claims are presented, is not limited to a physical or software implemented step.

² Son '387, column 6, lines 5-11.

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address mark; regulation of that movement will be made by, *inter alii*, a component such as a controller 14. In consideration of this second scenario, the Examining staff is respectfully requested to contemplate whether regulation of the movement of head 4 to accommodate movement of head 4 to a position which would allow head 4 to read the second data address mark would constitute "regulating movement of said head based on at least one of said first data address mark and said second data address mark"?

In the third scenario, neither the first nor the second data address mark are able to be detected upon the first pass of head 4. The Examining staff is respectfully invited to contemplate whether regulator 14, or some other controller such as a host computer, might continue to regulate movement of head 4 based upon one, or perhaps both, of the first data address mark and the second data address mark in the third scenario. Could regulation of the movement of head 4 to accommodate a second pass by head over the first data address mark would constitute "regulating movement of said head based on at least one of said first data address mark and said second data address mark"? Could regulation of the movement of head 4 to accommodate some alternative default movement by the head constitute "regulating movement of said head based on at least one of said first data address mark and said second data address mark"?

Accordingly, in view of the foregoing demonstration that Applicant's specification does in fact give "clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertained by reference to the description", there is no basis for maintaining this objection under 37 CFR §1.75(d). Its withdrawal is respectfully urged.

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P54757RE2**I. Rejection of the Claims Under 35 U.S.C. §112****1) Rejection of claims 32-34 and 50-52 under the first paragraph of 35 U.S.C. §112**

Claims 32-34 and 50-52 are rejected under the first paragraph of 35 U.S.C. §112 as failing to comply with the written description requirement. Applicant respectfully traverses this rejection for the following reasons.

In support of this rejection, Paper No. 20051109 states that,

“a controller regulating movement of said head based on at least one of said first data address mark and said second data address mark” which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.”

Paper No. 20051109 continues by stating that,

“There is no disclosure of regulating movement of the head based on one of the data address marks as claimed. Col. 4, lines 5-11 show the disk format is servo sectors and data sectors, and the actual digital data is written into the data fields which are in the data sectors, not the servo sectors. Col. 4, lines 26-30 and 34-37 show the data address mark is part of the data field, the data address mark informs that the data is started and provides necessary synchronization when reading the data, and the data is the actual digital information stored in the disk, and thus is not the servo information stored on the disk in the servo sector. Col. 4, lines 12-21 do discuss information such as cylinder number which could conceivably be used while regulating movement of said head, but this is in the context of the ID field, which is distinct from the data field. Col. 5, lines 21-43 describe regulating movement of said head, but by using head position information which is servo information, and by using a track number. The disclosure does not state the source of the track number information. A review of all the prior art cited by both the

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examiner and by applicant during the prosecution of this application shows track number information is commonly obtained in the art from the servo information in servo sectors, not from the user data in data sectors. Even if it were obtained from the cylinder number mentioned above, that would still be from the ID field and not from the data field. There is no description of said claim limitation in applicant's disclosure as originally filed, thus said claim limitation is new matter and must be deleted from the claims.

Applicant suggest that the Examining staff has misinterpreted the first paragraph of 35 U.S.C. §112. "The invention" referred to by the first paragraph is defined by the second paragraph of 35 U.S.C. §112, in which the Congress of these United States has granted exclusively to "the applicant", and not to the Examining staff, the sole right to determine "the subject matter which the applicant regards as his invention." Applicant has exercised that right, and has specifically defined certain aspects in the rejected claims; nothing in the claims at issue restricts the practice of the subject matter which Applicant regards as his invention to regulating movement of a head on the basis of only "information such as cylinder number which could conceivably be used while regulating movement of said head," or upon information read from "the ID field, which is distinct from the data field." Moreover, nothing in the rejected claim requires the regulation of movement to be based upon "information such as cylinder number" or upon "the ID field." The attention of the Examining staff is invited to consider that the questioned paragraphs of the rejected claims do not assert that the data address marks contain "the servo information stored on the disk in the servo sector" as asserted by the Examining staff; as is demonstrated throughout the foregoing pages of this paper in response to the objection to the specification, the specification provides a clear, written description of the subject matter which the Applicant

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regards as his invention. As one item of evidence of record, the Examining staff is again invited to contemplate Applicant's three operational scenarios invoking the structure described in the originally filed specification. In the first of the scenarios,

"[d]uring the read operation of each section, when only one byte of data address mark is detected among 2 bytes of data address marks, it is regarded as an effective data address mark. That is, if the first data address mark is normally detected, the second data address mark of one byte is skipped and the following information is regarded as data."¹

The first scenario expressly contemplates movement of the head 4, and in the larger scheme of the operation of the disk drive, movement of the magnetic head 4 must continue after reading of the first data address mark if, for no other reason than to pass over (or "skip") the second data address mark and place head 4 in a position relative to the disk so that head 4 is able to read the data stored after the second data address mark; regulation of that movement by, *inter alii*, a component such as a controller 14. In consideration of this first scenario, the Examining staff is respectfully requested to contemplate whether regulation of the movement of head 4 to accommodate movement of head 4 to a position which would allow head 4 to read the first data address mark would constitute "regulating movement of said head based on at least one of said first data address mark and said second data address mark"?²

In the second scenario,

"[d]uring the read operation of each section, when only one byte

¹ Son '387, column 6, lines 5-11.

² As an aside, it may be noted that the "skipping" of the second data address mark may be accomplished in more than one way, and as Applicant's claims are presented, is not limited to a physical or software implemented step.

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of data address mark is detected among 2 bytes of data address marks, it is regarded as an effective data address mark. That is, if the first data address mark is normally detected, the second data address mark of one byte is skipped and the following information is regarded as data. If the first address mark has a defect, however, the second data address mark is detected.”¹

In other words, when difficulty is encountered in detecting the first address mark, one determination must be made of whether “the first data address mark” has been normally detected and a second determination must be made to attempt to detect the second address mark; this second scenario expressly contemplates movement of the head 4, and in the larger scheme for operation of the disk drive, movement of the magnetic head 4 must continue after reading of the second data address mark if, for no other reason than to position head 4 in a position relative to the disk so that head 4 is able to read the data stored after the second data address mark; regulation of that movement will be made by, *inter alii*, a component such as a controller 14. In consideration of this second scenario, the Examining staff is respectfully requested to contemplate whether regulation of the movement of head 4 to accommodate movement of head 4 to a position which would allow head 4 to read the second data address mark would constitute “regulating movement of said head based on at least one of said first data address mark and said second data address mark”?

In the third scenario, neither the first nor the second data address mark are able to be detected upon the first pass of head 4. The Examining staff is respectfully invited to contemplate whether regulator 14, or some other controller such as a host computer, might

¹ Son '387, column 6, lines 5-11.

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continue to regulate movement of head 4 based upon one, or perhaps both, of the first data address mark and the second data address mark in the third scenario. Could regulation of the movement of head 4 to accommodate a second pass by head over the first data address mark would constitute "regulating movement of said head based on at least one of said first data address mark and said second data address mark"? Could regulation of the movement of head 4 to accommodate some alternative default movement by the head constitute "regulating movement of said head based on at least one of said first data address mark and said second data address mark"?

Accordingly, an in view of the foregoing demonstration that Applicant's specification does in fact "contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable" There is therefore, no basis for maintaining this rejection of claims 32 through 34 and 50 through 53 under the written description clause of the first paragraph of 35 CFR §112. Its withdrawal is respectfully urged.

2) Rejection of Claims 32-34 and 50-52 Under First Paragraph Of 35 U.S.C. §112

Claims 32 through 34 and 50 through 52 were rejected in Paper No. 20051109 under the first paragraph of 35 U.S.C. §112 as "being enabling for reading first and second data address marks, does not reasonably provide enablement for *a controller regulating movement of said head based on at least one of said first data address mark and said second data address mark.*" Applicant respectfully traverses this rejection for the following reasons.

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Contrary to the assertion of the Examining staff, the paragraph of the rejected claims in question do not contain the verb "reading."

Pending claims 32, 50, 51 and 52 read, in part:

"a controller regulating movement of said head based on at least one of said first data address mark and said second data address mark."

Turning again to the Examiner's stated concern,

"The disclosure does not state the source of the track number information. A review of all the prior art cited by both the examiner and the applicant during prosecution of this application shows *it* is commonly obtained in the art from the servo information in servo sectors, not the user data in data sectors. Even if it were obtained from the cylinder number mentioned above, that would still be from the ID field and not from the data field."¹

and the Examiner's summary conclusion that,

"making the claimed invention would require undue experimentation, as the disclosure completely lacks any description of how one can regulate the position of the head based on data address marks, while the cited prior art fails to show even the slightest description of how this *feat* can be performed and the examiner in his experience can not recall any showing in the prior art of *such a means* for regulating head movement."²

Applicant respectfully submits that this rejection couched upon a question of "enablement" is simply a rewording of the conclusion set forth in Paper No. 20050510, namely that "the word

¹ Paper No. 20051109, page 4.

² Paper No. 20051109, pages 4 and 5.

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'movement' renders the claim indefinite."¹ The issue here is not the presence, or absence, of regulation of *movement*, but synchronization in the regulation of that movement. In the art of synchronization of a clock to read data from a storage medium, the actual format of a *data track* depends upon the particular design of the disk drive system.² Regardless of format however, "the electronics controlling the storage and retrieval operations of a disk drive must have the means to precisely and reliably determine the *start of user data* in each data sector so that data may be accurately reproduced."³

This *movement* of the actuator assembly is controlled by the servo electronics and servo microcode, "which regulate a control signal to a voice coil motor."⁴ Closed loop servo systems use,

"feedback information [read] from the disk to find and maintain a position over a target track."⁵

As is explained by Malone '497, the:

"feedback information may be [either] located on a signal, dedicated disk surface (*i.e.*, a dedicated servo) or embedded on

¹ Paper No. 20051109, pages 4 and 5.

² As explained by Malone '497, *infra*, "[d]ata tracks are further subdivided into one or more blocks or sectors of data." Column 1, lines 19-21.

³ See, by way of example of the state of synchronization in the art, Daniel J. Malone, U.S. Patent No. 6.181.497 issued 30 January 2001; Daniel J. Malone, U.S. Patent No. 6.124.994 issued 26 September 2000; Daniel J. Malone, U.S. Patent No. 6.392.830 issued 21 May January 2002; and Daniel J. Malone, U.S. Patent No. 6.583.943 issued 24 June 2003, all at column 1, lines 21 through 26.

⁴ Malone '497, column 1, lines 44-46.

⁵ Malone '497, column 1, lines 46-48.

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data tracks between portions of data (embedded servo).”¹

Malone ‘497 carefully distinguishes between servo information such as AGC recovery field 10, clock synchronization or VFO field 12, and sync byte field 14 including one or more adjacent sync bytes, and the user defined data found in data field 16, and nowhere attributes any servo function to the data. Applicant’s “data address mark” however, is a constituent component of a “data field.”² As is explained by Applicant’s original specification, the:

“data address mark informs the disk drive that the data is started and provides necessary synchronization when the magnetic disk driving apparatus reads the data.”³

This is what is expressly taught by Applicant’s specification when the Applicant writes that the:

“data address mark informs the disk drive that the data is started and provides necessary synchronization when the magnetic disk driving apparatus reads the data.”⁴

How the servo circuit may be designed to employ the synchronization component of a data address mark is a separate issue, but it is important to recall that Applicant’s microcontroller 14 receives:

- “a phase error signal (PES)” generated by read/write by “decoding head position information, *i.e.*, a part of servo information, which is recorded on the disk ... The PES is then transmitted to the micro-controller 14 via the A/D converter 12. At this stage the A/D converter 12 converts the PES into a digital value corresponding to a predetermined level and transmits the converted PES to the

¹ Malone ‘497, column 1, lines 48-51.

² Son, U.S. Patent No. 5,963,387 issued 5 October 1999, column 4, lines 26 and 27.

³ Son ‘387, column 4, lines 35-37.

⁴ Son ‘387, column 4, lines 35-37.

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micro-controller 14.”¹

- “Track information detector 13 is connected between the read/write channel circuit 10 and the micro-controller 14 for detecting from the RDATA, a track number for the current position of the transducer head 4 and providing the detected data to the micro-controller 14.”²
- Micro-controller 14 controls the DDC 28 controls the DDC 28 according to a command received from the host-computer to search a track and *position* of the transducer head. In doing so, the micro-controller 14 uses the track number and the PES input *from* the track information detector 13 *and* the A/D converter 13, respectively.”³

Accordingly, Applicant’s “controller regulating movement of a data address mark in controlling movement and maintaining track alignment of the head based on at least one of said first data address mark and said second data address mark” is not indefinite. Withdrawal of this rejection is therefore, respectfully requested.

Applicant notes that contrary to the requirement for completeness set forth in 37 CFR §1.104(a), (b) and (c), nowhere does Paper No. 20050510 explain how the “applicant’s disclosure provides no guidance as to how to make this aspect of the claimed invention” to based the regulation of movement of the head “based on at least one of said first data address mark and said second data address mark.”, or precisely where there is any lack of enablement under the first paragraph of 35 U.S.C. §112 of how to:

“a controller regulating movement of said head based on at least one of said first data address mark and said second data address mark.”

¹ Son ‘387, column 5, lines 21-28.

² Son ‘387, column 5, lines 29-33.

³ Son ‘387, column 5, lines 38-43.

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Pursuant to 37 CFR §1.104(a), (b) and (c) therefore, clarification is **firstly** respectfully requested in subsequent Office correspondence to explain precisely where Applicant's teaching of "regulating movement of said head based on at least one of said first data address mark and said second data address mark" is not enabled by the foregoing litany of excepts set forth in the earlier pages of this paper. Clarification is **secondly** respectfully requested to explain whether the Examining staff does not regard Applicant's use of a controller to regulate "movement of said head based on at least one of said first data address mark and said second data address mark", or, in the words of Paper No. 200500510, a "basis for regulating *head movement* based on data address marks." Absent the requested clarification, withdrawal of this rejection is required.

II. Rejection of Claims 1-3, 6, 16, 17, 20, 21, 24, 26-28, 31, 32, 35-51 and 54 under 35 U.S.C. §102(e)

Claims 1 through 3, 6, 16, 17, 20, 21, 24, 26 through 28, 31, 32, 35 through 51 and 54 are again rejected under 35 U.S.C. §102(e) as being anticipated by Malone Sr., U.S. Patent No. 6,181,497. Applicant respectfully traverses this rejection for the following reasons.

In support of this rejection, Paper No. 20050510 states that,

"Malone, Sr. Figures 2A, 5A-8, and 10 meet all [of] the limitations of claims 1, 16, 20, 24, 26-27, 31, 40, 44, 46-47, 49, and 54. Figure 5A shows recording said data address mark to establish synchronization requested for reading user data in at least two different recording locations (14 and 62, where sync bytes correspond to the claimed data address marks as they indicate the location of the data along the track), and Figure 8 shows when one data address mark (14) is detected (92) to

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establish synchronization requested for reading user data (96), regarding said one mark as an effective mark of a corresponding data region, and skipping a remaining mark (62) when any one mark is normally detected (98), which comprises distinguishing between the two address marks. Figure 2A shows data blocks (34) preceding said servo information area (30)."

This excerpt taken from Paper No. 20050510, given by the Examining staff as its rationale for finding anticipation, fails to make a *prima facie* showing of anticipation under 35 U.S.C. §102(e) and is unsupported by the teachings of Malone U.S. Patent No. 6,181,497 issued on the 30th of January 2001.

A. The Anticipation Rejection Of Claims 1-3, 6, 16, 17, 20, 21, 24, 26-28, 31, 32, 35-51 And 54 Depends Upon A Technically Inaccurate Interpretation Of Malone '497.

Claim 1 reads, *inter alia*,

"recording of said data address mark in at least two different recording locations of said data track"

Claim 16 reads,

"a data block preceding a servo information area in a magnetic recording medium for accessing user data therefrom, comprising: writing a first data address mark in said data block; and writing a second data address mark in said data block at a location preceding said servo information area;

and claim 20 reads,

"magnetic recording medium having a data track having one or more data blocks preceding a servo information area, comprising: a first data address mark located before said servo information area in a first data block; and a second data address mark located before said servo information area in said first data block."

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Claim 24 reads:

“a magnetic recording medium having at least one data block that includes at least a first data address mark and a second data address mark having no servo information area therebetween”;

claim 31 reads:

“recording a data address mark providing synchronization that enables reading of data from the memory disk, along a data track on the memory disk at a first location on a first data block preceding a servo information area”;

and claim 32 reads:

“a head positioned to read, within at least one of a plurality of data blocks of a recording medium, a first data address mark, and a second data address mark, said first data address mark and said second data address mark having no servo information therebetween ...”

One definition of an “address mark” is a “[t]wo byte address at the beginning of both the ID field and the data field of the track format”;¹ claims 1 through 3, 6, 16, 17, 20, 21, 24, 26 through 28, 31, 32, 35 through 51 and 54 define, among other aspects of Applicant’s inventions, storage topography and steps in terms of “data address marks.” Malone ‘497 however, nowhere uses the phrase “data address mark.” To paraphrase the Board of Patent Appeals and Interferences, how can Malone ‘497 be read to teach Applicant’s “recording of said data address mark in at least two different recording locations of said data track ” when Malone ‘497 does not even use the phrase “*data address mark*”?

By definition, a “servo-mark” is a component of a “feed-back positioning system” that

¹ USByte.com – Glossary of PC terms, 8/5/2005.

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is “needed to help [the] magnetic head to evaluate its current position.”¹ Malone ‘497 explains that “the electronics controlling the storage and retrieval operations of a disk drive must have the means to precisely and reliably determine the *start of user data* in each data sector so that data may be accurately reproduced.”² This *movement* of the actuator assembly is controlled in the configuration of Malone ‘497, by the servo electronics and servo microcode, “which regulate a control signal to a voice coil motor.”³ Closed loop servo systems use,

“feedback information [which is read] from the disk to find and maintain a position over a target track.”⁴

As is explained by Malone ‘497, the:

“feedback information may be [either] located on a signal, dedicated disk surface (*i.e.*, a dedicated servo) or embedded on data tracks between portions of data (embedded servo).”⁵

The,

“exact composition of [primary sync] field 14 is not critical to implementation of the present invention, so long as a pattern is provided that can be distinguished in some manner by the read channel electronics of the disk drive.”⁶

¹ USByte.com – Glossary of PC terms, 8/5/2005.

² See, by way of example of the state of synchronization in the fixed block architecture (FBA) art, Daniel J. Malone, U.S. Patent No. 6.181.497 issued 30 January 2001; Daniel J. Malone, U.S. Patent No. 6.124.994 issued 26 September 2000; Daniel J. Malone, U.S. Patent No. 6.392.830 issued 21 May January 2002; and Daniel J. Malone, U.S. Patent No. 6.583.943 issued 24 June 2003, all at column 1, lines 21 through 26.

³ Malone ‘497, column 1, lines 44-46.

⁴ Malone ‘497, column 1, lines 46-48.

⁵ Malone ‘497, column 1, lines 48-51.

⁶ Malone ‘497, column 6, lines 4-7.

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In other words, a primary synchronization field 14, or a secondary synchronization field has a predetermined and precise content, rather than a user dependent content, in order to form “a *pattern* that can be distinguished.” As further explained by Malone ‘497,

“[t]he VFO field is followed by a pattern or group of adjacent patterns, generally referred to as ‘sync bytes’, that mark the beginning of the data field and provide a frame of reference for correctly distinguishing data bytes. Sync bytes are detected by sync byte detection logic in the data channel that looks for one or more predetermined sync byte patterns during a certain window of time. Once the sync byte is identified, the data bytes that follow can be properly *decoded*.”¹

As explained by one commentator,

“[i]t is possible that the beginning of the user’s data might look just like the repetitive pattern of the preamble. To precisely indicate the end of the preamble a unique, easily identify transition sequence called the *sync mark* or frame sync, is written in between the preamble and the user’s data. The sync mark is typically 2 to 6 bytes long and may be written in two locations in case the first sync mark is missed or damaged.”²

This conforms with the teachings of Malone ‘497, namely:

“The sync byte field 14 preferably includes three adjacent bytes of sync patterns for use in a two-out-of-three voting detection scheme. It will be understood, however, that the exact composition of field 14 is not critical to implementation of the present invention, so long as a pattern is provided that can be distinguished in some manner by the read channel electronics of the disk drive.”³

¹ Malone ‘497, column 2, lines

² Action From Research, by Action Front Data Recovery Labs, Inc., www.actionfront.com (8 August 2005).

³ Malone ‘497, column 6, lines 1-7.

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As taught by Malone '497, distinguishing a pattern "in some manner"¹ and decoding of data are two different operations; the Examining staff has however, improperly ignored these differences, and has sought without support of any evidence in the record, to equate a "sync byte" with a "data address mark."² It is important for the Examining staff to understand that Malone '497 does not stand alone, and that Malone '497 did not create memory storage out of whole cloth; rather, Malone '497 is simply one of the series of improvements upon the *servo sector* of disks by Steven R. Hetzler and assigned to International Business Machines.³ Several items of the work of Hetzler, by way of example, are incorporated into Malone '497.⁴ It is essential to understand the structure, nature, function and results produced by a "sync byte" as was earlier taught by Hetzler '535, and adopted by Malone '497.⁵ Hetzler teaches that,

¹ Malone '497, column 6, lines 4-7.

² Paper No. 20050510 defines Figures 5A and 5B of Malone '497 in terms of Applicant's pending claims, substituting, for example, Applicant's "data address mark" to identify sync bytes 14, 62 of Malone '497. It has been long observed however, that if the drawings of a reference do not adequately disclose the invention defined by the pending claims, there is no anticipation. *Ex parte McIntosh*, 15 U.S.P.Q. 58 (BPAI 1931).

³ *Sector Servo Data Recording Disk Having Data Regions Without Identification (ID) Fields*, by John S. Best and Steven R. Hetzler, U.S. Patent No. 5,500,848 issued on the 19th of March 1996; *Fixed Block Architecture Disk File With Improved Position Identification And Error Handling*, by Steven R. Hetzler, U.S. Patent No. 5,369,535 issued on the 29th of November 1994; and *Apparatus For Controlling Reading And Writing In A Disk Drive*, by Steven R. Hetzler, U.S. Patent No. 5,285,327 issued on the 8th of February 1994,

⁴ The efforts in the art by Steven R. Hetzler, including Hetzler's concept of encoding "servo information *inside* the data sectors," are also noted in *The Elements of Design*, by Tom Thompson, BYTE.com, August 1996.

⁵ The *Apparatus For Controlling Reading And Writing In A Disk Drive*, by Steven R. Hetzler, U.S. Patent No. 5,285,327 issued on the 8th of February 1994, is cited by Malone '497 at column 1, line 55, as teaching embedded servo disk drives. Hetzler '327 itself purports to teach improvements applicable to (i) CLD recording, (ii) banded

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“The function of sync byte field 26 is to tell the controller when the VCO synchronization and ENDEC flush end and the *real data*, which is contained in field 27, *begins*.”¹

In short, in the art of Hetzler ‘535, *et sequetia*, and Malone ‘497, the *sync byte* is not a part of the *real data*.

Turning then to the *data address mark*, rather than Malone ‘497’s *sync byte*, as defined by the pending claims, a “data address mark” is a component not of Hetzler’s and Malone ‘497 *servo sector*, but of a *data block*. Moreover, unlike a *sync byte*, a *data address mark*:

“Informs [the controller] that the data is started and provides necessary synchronization when the magnetic disk driving apparatus reads the data.”²

This means that when microcontroller 14 detects one of the two data address marks during a read operation of a sector, the possibility is avoided that the data immediately following that address mark in the corresponding data field of the data sector can not be read due to a failure to detect the data address mark. To assure that a data address mark is distinguished from other information and read, a unique pattern is used for each data address mark. By way of example, in one type of storage disk,

“[a]n address mark is recorded in each AM field. The address mark serves to detect the boundary between blocks. This address mark indicates the recording position of the address data of a PID_n filed. The address mark includes a violation pattern violating a

disk using sectored servos, and (iii) non-sectored architecture such as count-key-data, as well as (iv) tape drives formatted in FBA or CKD.

¹ *Apparatus For Controlling Reading And Writing In A Disk Drive*, by Steven R. Hetzler, issued 8th of February 1994, column 3, lines 12-15.

² Son ‘387, column 4, lines 35-38.

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predetermined run length limitation. For example, the address mark includes a violation pattern ... [with a run length of 13 zeros] violates a run length limitation [*i.e.*, a RLL limitation] corresponding to run lengths of 2 to 10.”¹

In the instant application, one technique disclosed for distinguishing the data address mark is to have,

“[t]he 7 most significant bits select any pattern defined as a user pattern ... [and] if only the 7 most significant bits are normally detected ... the micro-controller 14 skips ... and regards the following information as data.”²

As most aptly explained by Tanoue, *et al.* ‘448, this distinctiveness of the data address mark assuredly,

“Prevents another pattern from being mistaken as an address mark”,³

thereby enabling “micro-controller 14 ... [to] regard the following information as data.”⁴ In this manner, micro-controller 14 is both prevented from erroneously reading any other information recorded on the storage medium as a data address mark, and is thus enabled to accurately and precisely begin reading user data from the very first bit following the second data address mark.

In contradistinction, when performing its function, a “sync byte”,

¹ *Information Recording Medium Where Address Mark Comprising Pattern Suitable For Prevention Of Detection Error Is Recorded, And Cutting Apparatus For Reproducing The Information Recording Medium*, by Koki Tanoue, *et al.*, U.S. Patent No. 6,351,448 issued on the 26th of February 2002, column 5, lines 26-34.

² Son ‘387, column 6, lines 3-25.

³ Tanoue, *et al.* ‘488, column 5, lines 35-37.

⁴ Son ‘387, column 6, lines 3-25.

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“Notifies the controller that data follows”.¹

A “sync byte” may be used for this purpose both prior to the servo sector data and prior to the data sector of a typical hard disk or a digital versatile disk.

Given this demonstration of the differences between the actual teachings of Malone ‘497 and those of the misstatement of the reference asserted in the foregoing rationale given by Paper No. 20050510, there is not basis for the attempt by the Examining staff to label redundant “sync bytes” 14, 62 as Applicant’s “data address bytes” because the location, function, characteristics and resulting affect upon micro-controller 14 are wholly different, incompatible, and are not interchangeable. Moreover, by definition, the “sync byte” of Malone ‘497 is not a constituent component of Applicant’s “data block preceding a servo information area” as is required by, among others, claims 16 and 20. Consequently, is no anticipation of these claims under 35 U.S.C. §102(e) by the third² and fourth³ embodiments of Malone ‘497. Withdrawal of this rejection and allowance of claims 1 through 3, 6, 16, 17, 20, 21, 24, 26 through 28, 31, 32, 35 through 51 and 54 is respectfully urged.

B. Request For Clarification.

Paper No. 20050510 is incomplete, and it is unclear from the rationale given by the Examining staff in support of this rejection is whether the Examining staff believes that Malone

¹ *Upgrading & Repairing PCs*, 8th Edition (September 1997), by Scott Mueller, MacMillan Computer Publishing, chapter 14, page 14, Table 14.5.

² Shown by Figure 5A of Malone ‘497.

³ Shown by Figure 5B of Malone ‘497.

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'497 additionally teaches that the "Sync bytes [which] are detected by sync byte detection logic in the data channel"¹ are *decoded* as a component of the data field? Clarification is accordingly respectfully requested in subsequent Office correspondence; specifically, the Examining staff is respectfully requested in compliance with the mandate for completeness, to first identify pursuant to 37 CFR §1.104(a), (b) and (c) the particular teaching of Malone '497 and the corresponding referenced component of Malone '497 which teach that "sync bytes" are *decoded* as a component of the data field, and second, to identify pursuant to 37 CFR §1.104(a), (b) and (c) the particular teaching of Malone '497 and the corresponding referenced component of Malone '497 which teach that a "data address mark" is either "a pattern" or a "group of adjacent patterns."² Clarification is thirdly respectfully requested to identify precisely where Malone '497 teaches, or suggests, that a "data address mark informs the disk drive that the data is started and provides necessary synchronization when the magnetic disk driving apparatus reads the data."³

C. The Rejection Fails To Make A *Prima Facie* Showing Of Anticipation Of Claims 1-3, 6, 16, 17, 20, 21, 24, 26-28, 31, 32, 35-51 And 54 Under 35 U.S.C. §102(e)

Malone '497 teaches that,

"[t]he VFO field is followed by a pattern or group of adjacent patterns, generally referred to as 'sync bytes', that mark the beginning of the data field and provide a frame of reference for

¹ Malone '497, column 6, lines 4-7.

² Malone '497, column 2, lines 62.

³ Son '387, column 4, lines 35-37.

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correctly distinguishing data bytes. Sync bytes are detected by sync byte detection logic in the data channel that looks for one or more predetermined sync byte patterns during a certain window of time. Once the sync byte is identified, the data bytes that follow can be properly *decoded*¹,

and the sync byte is distinguished “in some manner by the read channel electronics of the disk drive”², while the data which has been written in the data field is decoded. In contradistinction to the “sync byte” of Malone ‘497, the “data field” is user supplied, and inherently lacks a particular composition or pattern.

The “data address mark informs the disk drive that the data is started and provides necessary synchronization when the magnetic disk driving apparatus reads the data.”³ Another commentator teaches that,

“[a]n address mark functions advantageously to achieve byte (a set of eight binary bits) synchronization. In particular, an address mark serves for identifying a sector header or the leading edge of a stream of used [*sic*, “user”] data bits. ... Preferably, each address mark within a given sector 25 is defined by a unique pattern of signal transitions to readily distinguish the address marks from each other within a sector and from the rest of the bit stream.”⁴

Inherent in a “data address mark” is an “address at the beginning of ... the data field of the track format.”⁵ Moreover, Applicant’s “data address mark” is a constituent component of a “data

¹ Malone ‘497, column 2, lines

² Malone ‘497, column 6, lines 4-7.

³ Son ‘387, column 4, lines 35-37.

⁴ *Windowing Method Of And Apparatus For Address Mark Detection*, by Kenneth E. Herting, U.S. Patent No. 5,047,877 issued on 10th of September 1991, column 1, lines 34-40 and column 3, lines 64-67. Cited by the Examiner in Paper No. 20050510.

⁵ USByte.com – Glossary of PC terms, 8/5/2005.

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field.”¹ Inherent in a “data address mark” is an “address at the beginning of ... the data field of the track format”;² an “address” aspect is not a characteristic of a “sync byte” and Malone ‘497 nowhere suggests that his “primary and secondary sync bytes” exhibit any characteristic of a “data address mark.”

Specifically, Malone ‘497 teaches a “primary sync field 14” and a “secondary sync field 62” that are patterns which “can be distinguished in some manner by the read channel electronics of the disk drive”³ while Applicant’s claims define “data address marks” that are address specific relative to other address marks within a sector.⁴ Unlike the “data address mark” of the pending claims which serves “to readily distinguish the address marks for each other within a sector and from the rest of the bit stream”,⁵ the “sync byte field 14, 62” of Malone ‘497 is simply “a pattern”.⁶ Although “the ‘sync bytes’” may accurately, as taught by Malone ‘497 “mark the beginning of the data field and provide a frame of reference for correctly distinguishing data bytes”, those “sync byte fields 14, 62” fail to provide an address mark for each of the data fields. The inability of “primary sync field 14” and “secondary sync field 62”

¹ Son, U.S. Patent No. 5.963.387 issued 5 October 1999, column 4, lines 26 and 27.

² USByte.com – Glossary of PC terms, 8/5/2005.

³ Malone ‘497, column 6, lines 6 and 7.

⁴ See, for example, Herting, U.S. Patent No. 5.047.877, *supra*, column 3, lines 65-67.

⁵ Herting, U.S. Patent No. 5.047.877, *supra*, column 3, lines 65-67.

⁶ Malone ‘497, column 6, lines 4-7. “It will be understood, however, that the exact composition of field 14 is not critical to implementation of the present invention, so long as a pattern is provided that can be distinguished in some manner by the read channel electronics of the disk drive.”

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to serve as a data address mark for a data field negates any possibility of anticipation under 35 U.S.C. §102(e). Withdrawal of this rejection is therefore required.

D. The Rejection Fails To Consider *The Invention As Defined By Claims 1-3, 6, 16, 17, 20, 21, 24, 26-28, 31, 32, 35-51 And 54 As Required Under 35 U.S.C. §102(e)*

35 U.S.C. §102(e) requires that an applicant be issued a patent, *unless* “(c) the invention was described in ... a patent granted on an application for patent by another filed in the United States before the invention by the applicant” That bar to issue of Applicant’s reissue patent has not been met.

Malone ‘497 teaches that,

“[t]he VFO field is followed by a pattern or group of adjacent patterns, generally referred to as ‘sync bytes’, that mark the beginning of the data field and provide a frame of reference for correctly distinguishing data bytes. Sync bytes are detected by sync byte detection logic in the data channel that looks for one or more predetermined sync byte patterns during a certain window of time. Once the sync byte is identified, the data bytes that follow can be properly *decoded*”¹,

and the sync byte is distinguished “in some manner by the read channel electronics of the disk drive”², while the data which has been written in the data field is decoded. Singularly absent from Malone ‘497 is any teaching or suggestion of how to make patterns which “can be distinguished in some manner by the read channel electronics of the disk drive” concomitantly sequentially different in consecutive variety to serve as specific addresses of data fields.

¹ Malone ‘497, column 2, lines

² Malone ‘497, column 6, lines 4-7.

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Nowhere does Malone '497 endow either of his "primary sync field 14" or his "secondary sync field 62" with an office of providing an address of one of a plurality of "data fields." These "sync bytes" identify no address. From another perspective, Malone '497 teaches that his "synch byte fields 14, 62" are each multiple byte patterns,¹ while each of Applicant's "data address marks" are, in essence, the "7 most significant bits of ... a data address mark constructed by 8 bits" ² In substance, the Examining staff has improperly ignored the characteristics of Applicant's "data address" feature of "the invention"³ defined by each of the pending claims, and without basis in the record, sought to summarily equate Applicant's "data address marks" with the "primary 14" and "secondary sync byte 62" of Malone '497. Absent teaching or suggestion of every aspect of a claim within a single reference, there is no anticipation and this rejection may not be sustained.

III. Rejection of Claims 7-15 under 35 U.S.C. §103(a)

Claims 7 through 15 are again rejected under 35 U.S.C. §103(a) as being unpatentable over the proposed combination of what the Examining staff endeavors to label the "Admitted

¹ See once again, Malone '497, column 6, lines 3-7, "It will be understood that the exact composition of field 14 is not critical ... so long as a pattern is provided that can be distinguished in some manner"

² Son '387, column 6, lines 20-22,⁴ which read: "For example, if only the 7 most significant bits are normally detected at the same time of detecting a data address mark constructed by 8 bits,"

³ 35 U.S.C. §102(e). "A person shall be entitled to a patent unless ... (e) the *invention* was described in ... (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent"

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Prior Art” and Malone Sr. ‘497. Applicant respectfully traverses this rejection for the following reasons.

A. The Rejection Of Claims 7 Through 15 Under 35 U.S.C. §103(a) Depends Upon A Technically Inaccurate Interpretation Of The Examiner’s Proposed Combination Of Art.

In support of this rejection, Paper No. 200500510 states that,

“Malone, Sr. Figure 5A shows recording a data address mark to establish synchronization requested for reading user data in at least two different recording locations (14 and 62, where sync bytes correspond to the claimed data address marks as the indicate the location of the data along the track)”¹

As noted earlier here, the Examiner’s proposed combination incorporating Malone ‘497 nowhere uses the phrase “data address mark”, and identifies reference locations 14, 62 as “primary sync byte field 14”² and “secondary sync byte field 62.”³ Consequently, the assertion of the Examining staff that in the Examiner’s proposed combination incorporating “Malone, Sr. Figure 5A shows recording a data address mark to establish synchronization requested for reading user data in at least two different recording locations (14 and 62,” is fiction, wholly unsupported by the record. Withdrawal of this rejection is therefore required.

B. The Rejection Of Claims 7 Through 15 Under 35 U.S.C. §103(a) Fails To Make A Prima Facie Showing Of Obviousness.

¹ Paper No. 20050510, Examiner’s comments, page 4.

² Malone ‘497, column 12, line 65.

³ Malone ‘497, column 14, line 6.

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In support of this rejection, Paper No. 200500510 states that,

“Malone, Sr. ... Figures 8 and 10 show detecting said data address mark to confirm validity of user data following said data address mark (92, 94)”¹

As noted earlier here, the Examiner’s proposed combination incorporating Malone ‘497 nowhere uses the phrase “data address mark”,² and in his explanation of Figures 8 and 10, describes step 92 as “a primary sync byte detection step 92”³ in which,

“Sync byte detector 252 searches for at least two out of three primary sync byte patterns for the duration of the sync detection timing window previously described.”⁴

Claims 7 and 11 however, define,

“recording a data address mark, during a recording mode, in at least two different locations of said data field immediately preceding a data area containing user data;
detecting said data address mark recorded in said different locations of said data field, during a reading mode, to confirm validity of user data contained in said data area following said data address mark;”

and,

“at least two different data address mark regions for use to indicate a validity of data recorded on said data sector is written”

Ignoring *arguendo* the complete absence of any teaching or suggestion in the Examiner’s proposed combination about Applicant’s use of more than a single “data address mark”, that

¹ Paper No. 20050510, Examiner’s comments, page 4.

² A more technically accurate reading of the Examiner’s proposed combination incorporates two “sync byte fields 14, 62” and employs those synch byte field for the same purpose, and with the same results as are taught by Malone ‘497.

³ Malone ‘497, column 13, line 40.

⁴ Malone ‘497, column 13, lines 41-43.

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proposed combination is utterly devoid of teaching about Applicant's employment of "different data address mark regions for use to indicate a validity of data recorded on said data sector"¹ or "to confirm validity of user data contained in said data area following said data address mark."² Consequently, Paper No. 20050510 fails to make a *prima facie* showing of obviousness under 35 U.S.C. §103(a).

C. The Rejection Of Claims 7 Through 15 Under 35 U.S.C. §103(a) Is Impermissibly Based Upon A Fatally Flawed Understanding Of The Examiner's Proposed Combination Of Art.

Return to the rationale given in Paper No. 200500510 for this rejection, namely the assertion of the Examining staff that,

"Malone, Sr. ... Figures 8 and 10 show detecting said data address mark to confirm validity of user data following said data address mark (92, 94) ...",³

and the contradiction of this assertion made by the express contrary statement taken from the Examiner's proposed combination incorporating Malone '497, which describes step 92 as "a primary sync byte detection step 92"⁴ in which,

"Sync byte detector 252 searches for at least two out of three primary sync byte patterns for the duration of the sync detection

¹ Pending claim 11.

² Pending claim 7.

³ Paper No. 20050510, Examiner's comments, page 4.

⁴ Malone '497, column 13, line 40.

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timing window previously described.”¹

Paper No. 20050510 however, asserts that its proposed combination skips “a remaining mark (62) when any *one mark* is normally detected (98),” an assertion that is at variance with the express teachings of the Examiner’s proposed combination.

Moreover, claims 7 and 11, define,

“skipping a remaining data address mark recorded in said different recording locations of said data track, when said data address mark recorded in said at least one of said different recording locations is detected”,

and,

“said transducer head not utilizing a remaining data address mark recorded in said different recording locations of said data track, when a data address mark recorded in said two different data address regions is detected,”

which is not the same feature, and is not preformed in the same manner, and does not produce the same result as the Examiner’s proposed combination’s technique of using “sync byte detector 252” to search “for at least two out of three primary sync byte patterns for the duration of the sync detection timing window previously described.”² Ignoring *arguendo* the fact forgotten by Paper No. 20050510 that the “sync byte field” lacks a “data address” aspect, were in the record of this prosecution is the evidence of the motivation in either the primary reference or in the secondary reference for replacing a primary sync byte field 14 and a secondary sync byte field 62 with Applicant’s “data address mark”³ which may advantageously employed to inform “the

¹ Malone ‘497, column 13, lines 41-43.

² Malone ‘497, column 13, lines 41-43.

³ The sole evidence of motivation advocated by Paper No. 20050510, page 5, is “to provide sync byte redundancy to improve overall disk drive reliability in a headerless

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disk drive that the data is started and provides necessary synchronization when the magnetic disk driving apparatus reads the data”¹ Given the absence of such evidence, a fair reading of the Examiner’s proposed combination is the very same use of “sync byte detector 252” searching “for at least two out of three primary sync byte patterns for the duration of the sync detection timing window previously described,”² as opposed to Applicant’s:

“skipping a remaining data address mark ... when said data address mark ... is detected”,

and,

“not utilizing a remaining data address mark ... when a data address mark ... is detected.”

The contrast between Applicant’s singular and the plural number of the Examiner’s proposed combination is itself convincing *indicia* of the non-obviousness of claims 7 through 15.

Furthermore, “data address marks” are not customarily read and decoded during a “sync detection timing window”; there is simply no evidence in the record created by the examining staff to support reading and decoding of a data address mark during the “sync detection timing window” as is required by the Examiner’s proposed combination. Absent this evidence, this rejection may not be maintained.

servo recording system.” This assertion is meaningless as evidence of the requisite evidence of motivation necessary to make a *prima facie* showing of obviousness; in essence, this assertion is **primarily** an admission that the Examiner’s proposed combination fails to make a *prima facie* showing of obviousness of claims 7 through 15 with Applicant’s “data address mark recorded in said different locations of said data field”, and **secondarily** an admission by the Examining staff that the Examiner’s proposed combination fails to endow the data field with the attributes of an address mark.

¹ Son ‘387, column 4, lines 35-37.

² Malone ‘497, column 13, lines 41-43.

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A more technically accurate reading of the Examiner's proposed combination would incorporate the two "sync byte fields 14, 62" and employ those synch byte fields for the same purpose, and with the same results as are taught by Malone '497. Accordingly, absent evidence in the record of the motivation for modifying the primary reference in the manner required by the Examiner's proposed combination, this rejection may not be maintained, and must be withdrawn. Such action is respectfully urged.

IV. Rejection of claims 16-54 Under 35 U.S.C. §251

Claims 16 through 54 are once again rejected under 35 U.S.C. §251 as being improper recapture of broadened claimed subject matter surrendered in the application for the patent upon which the present reissue is based. Applicant again respectfully traverses this rejection for the following reasons.

In support of this rejection, Paper No. 2000500510 asserts that,

"[t]he record of the application for the patent shows that the broadening aspect (in the reissue) relates to subject matter that applicant previously surrendered during the prosecution of the application. ... claims 16, 20, 24, 26, 31, and 35-54 ... omitted the language *skipping a remaining data address in said different recording locations of said data track, when any one data address mark recorded in said different recording locations is normally detected and said transducer head not utilizing a remaining data address mark recorded in said different recording locations of said data track, when a data address mark recorded in a different data address regions is detected*. This language was specifically added to claim in the original patent place it in condition for allowance.¹

¹ Paper No. 20050510, page 6.

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This rationale provides no justification on the instant record to maintain this rejection.

A. Paper No. 20050510 Improperly Imposes A *Per Se* Rule Of Reissue Recapture To Justify A Rejection Of Claims 16-54 Under 35 U.S.C. §251

The Examining staff has improperly sought to impose a *per se* rule of reissue recapture to prevent Applicant from retreating from any claim limitation determined to have secured allowance of the original patent

In essence, the Examining staff is arguing that because claims were amended prior to allowance of the parent patent, no claim may be granted in a reissue application which does not contain either of the two limitations incorporated into the patent's claims. This is a *per se* rule of reissue recapture. Nothing in 35 U.S.C. §251 supports this *per se* rule of reissue recapture; moreover, the practice in the U.S. Patent & Trademark Office does not support this *per se* rule.

The first clause cited in Paper No. 20050510, *skipping a remaining data address in said different recording locations of said data track, when any one data address mark recorded in said different recording locations is normally detected*,¹ was initially set forth in original dependent claim 2, and in an amendment of parent patent claim 1 made on the 29th of March 1999, was added to claim 1 (now patent claim 1). The Examining staff had determined that dependent claim 2 was allowable if rewritten in independent form. The second clause, *said transducer head not utilizing a remaining data address mark recorded in said different recording locations of said data track, when a data address mark recorded in a different data*

¹ Although not identified by Paper No. 20050510, this clause is taken from the amendment of independent process claim 1 made on the 29th of March 1999.

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address regions is detected,¹ was initially set forth in original dependent claim 13, and in an amendment of parent patent claim 11 also made on the 29th of March 1999, was added to claim 11 (now patent claim 11). Claim 13 had also been determined by the Examining staff to be allowable.

As was carefully explained by the Board of Patent Appeals and Interferences on the *Request for Rehearing in Ex parte Eggert*, Appeal No. 2001-0790 decided on the 29th of May 2003,²

“The changing scope of a claim during the administrative examination process as it is amended to overcome prior art rejections can be viewed as a series of concentric circles.”

This reasoning by the Board may not be ignored by the Group Art Unit. Succinctly, the outer concentric circle mentioned by the Board represents, in the opinion of the Board, the scope of coverage of the unamended claims in the parent application that were subject to rejection during prosecution of the patent, while the inner concentric circle represents the scope of the amended, and issued patent claims. In the view of the Board, the surrendered subject matter is the outermost of the concentric circles. The subject matter between the concentric circles however,

“was not subject to the administrative examination process as the examiner was never directly presented with a claim which fell within the scope of coverage which exists between the inner and outer concentric circles.”

Thus, the Board determined that,

¹ Although not identified by Paper No. 20050510, this clause is taken from the amendment of independent apparatus claim 11 made on the 29th of March 1999.

² *Ex parte Eggert*, et al., 67 USPQ2d 1716 (BAPI; 2003); cited by the *Manual of Patent Examining Procedure*, 8th Ed, Rev. 2, §§ 716.02 and 1412.02.

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“appellants have never conceded that a claim falling within the scope of the”

area between the concentric circles,

“is unpatentable and therefore, in our view, such subject matter is not barred by the recapture rule.”

On the basis of this evidence, the Board explained that the approach of the Examining staff was to argue for a *per se* rule, and the Board both refused the approach of the Examining staff and refused to sustain the reissue recapture rejection.

In the instant matter, the scope of the pending claims falls within the area between the inner and outer concentric circles, that is, between the scope of the originally presented claims and the scope of the amended patent claims, and are not the subject of any disclaimer by Applicant. Nowhere in the record is there any evidence supporting the Examiner's assertion that the act of amending an allowable claim in the parent patent is an act of estoppel. Moreover, the record before the Examiner establishes that the parent patent was the subject of but a single amendment, and that Applicant made no disclaimer on the record. There is therefore, no basis for maintaining this rejection. Its withdrawal is required.

B. Paper No. 20050510 Provides No Justification For A Rejection Of Claims 16-54 Under 35 U.S.C. §251

As noted in the foregoing paragraphs, no effort has been made in Paper No. 20050510 to demonstrate a disclaimer by the Applicant of the patentability of the subject matter defined by claims 16 through 54. The Examining staff has incorrectly applied the rule of reissue recapture

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in a manner that is contrary to the language of 35 U.S.C. §251, which expressly contemplates reissue of broader claims.¹ Consequently, on this record, there is no evidence to support a finding of “reissue recapture” because nowhere in the record has Applicant stated that either the first clause, *skipping a remaining data address in said different recording locations of said data track, when any one data address mark recorded in said different recording locations is normally detected*,² or the second clause, *said transducer head not utilizing a remaining data address mark recorded in said different recording locations of said data track, when a data address mark recorded in a different data address regions is detected*,³ constituted the an outer boundary upon the scope of coverage of Applicant’s inventions. Moreover, the record before the Examiner establishes that the parent patent was the subject of but a single amendment, and that Applicant made no disclaimer on the record. Absent a basis established by the evidence of record, this rejection must be withdrawn. Such action is respectfully solicited.

C. Paper No. 20050510 Fails To Address Applicant’s Response To The Rejection Of Claims 16-54 Made In Papers Nos. 13 and 19, In Response To Office Actions Issued On 24 November 2004 And 18 May 2005

First, in Paper No. 13, the Examiner asserted that,

¹ 35 U.S.C. §251 carefully defines the circumstances under which an enlargement “of the scope of the claims of the original patent” may not be granted. The evidence before the Examining staff provides no basis under 35 U.S.C. §251 for refusing Applicant’s application for an enlargement of the scope of the claims of the original patent.

² Although not identified by Paper No. 20050510, this clause is taken from the amendment of independent process claim 1 made on the 29th of March 1999.

³ Although not identified by Paper No. 20050510, this clause is taken from the amendment of independent apparatus claim 11 made on the 29th of March 1999.

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“[a] broadening aspect is present in the reissue, which was not present in the application for patent. The record of the application for the patent shows that the broadening aspect (in the reissue) relates to subject matter that Applicant previously surrendered during the prosecution of the application. Accordingly, the narrow scope of the claims in the patent was not an error within the meaning of 35 U.S.C. §251, and the broader scope surrendered in the application for the patent cannot be recaptured by the filing of the present reissue application.”

The Examiner's assertion is an incorrect application of 35 U.S.C. §251, that raises several issues.

Examination of these issues reveals an absence of justification for the Examiner's application of 35 U.S.C. §251 to support this rejection.

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Second, in the application of 35 U.S.C. §251 to support this rejection of Applicant's reissue claims 16-51, the Examiner has argued that:

"In claims 16-51, Applicant has omitted the language 'skipping a remaining data address in said different recording locations of said data track, when any one data address mark recorded in said different recording locations is normally detected' and 'said transducer head not utilizing a remaining data address mark recorded in said different recording locations of said data track, when a data address mark recorded in a different data address regions is detected'. This language specifically added to claims in the original patent to place it in condition for allowance".

The Examiner's assertion is improper as a matter of law. The Examiner's attention is invited to the rejection, which is based upon the statute set forth in 35 U.S.C. §251, which provides that:

"Whenever any patent is, through error without any deceptive intention, deemed wholly or partly inoperative or invalid, by reason of ... the patentee claiming more or less than he had a right to claim in the patent, the Director shall ... reissue the patent for the invention disclosed in the original patent, and in accordance with a new and amended application"

Moreover, 35 U.S.C. §251 expressly contemplates issuing a reissue patent with claims that are broader than those issued in the patent. Specifically, 35 U.S.C. §251 states that:

"No reissued patent shall be granted enlarging the scope of the claims of the original patent unless applied for within two years from the grant of the original patent"

The instant application was in fact filed within the two year window.

In the Examiner's response and argument, the Examiner argues that the Applicant's statement that "forming and processing a data address mark" defers from "a method of providing a data block", describing the step of "writing" rather than "the step of processing in address

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mark" is, in the Examiner's opinion, erroneous. The basis for the Examiner's disagreement is the Examiner's assertion that the phrase taken from the preamble of independent, rejected claim 16, namely "a method of providing a data block" encompasses the "processing step" defined by dependent claims 18 and 19. The Examiner is cautioned that the rejection and the examination should be of independent claim 16; any effort by the Examiner to read features from dependent claims 18 and 19 into independent claim 16, is unauthorized and impermissible. Claim 16 is an independent claim; moreover, claim 16 was presented in this application to provide a broader scope of coverage than was found in the claims of the Applicant's U.S. Patent No. 5,963,387. The fact that the scope of coverage provided by claim 16 is broader in scope, is no basis for a reissue capture rejection under 35 U.S.C. §251. Furthermore, the presence of dependent claims such as 18 and 19 which define other and additional steps of "processing" provides no basis in U.S. practice for interpreting a single preamble phrase of a patent claim. The impropriety of the Examiner's argument demonstrates is fallaciousness.

The Examiner continues to argue that the verb "providing" encompasses both "the writing as well as [the] forming and processing." It is unclear why the Examiner has made this assertion, because the verb "providing" is a single verb found in the preamble of claim 16. Any question of reissue recapture under 35 U.S.C. §251 is determined by prosecution of the patent application, rather than misguided efforts by the Examiner to improperly read into an independent claim, features defined by claims depending upon that independent claim.

The Examiner continues in this vein by persisting in an effort to limit the scope of coverage provided by independent claim 26, based upon the Examiner's endeavor to read

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features defined by dependent claims 27, 29 and 30 into independent claim 26. Claim 26 stands upon its own, and its scope of coverage is interpreted broadly, unlimited by the language of claims depending upon independent claim 26. Moreover, claim 26 expressly defines a "method for reading a data block." Consequently, whether "reading" or "writing" may be characterized as "processing", the fact is the Examiner's interpretation of single verbs in independent claims 16 and 26 is pointless and unmerited by the prosecution history of this application. Attempts to limit the scope of coverage accorded to these independent claims by improperly attributing features found in their dependent claims, is contrary to statute. Questions of reissue recapture simply may not be resolved by resorting to the language of the dependent claims. Withdrawal of the line of reasoning in subsequent Office correspondence is respectfully requested.

Third, the Examiner's interpretation of claims 16 through 51 in a misguided effort to justify reissue recapture is, as was previously explained to the Examiner, is incorrect on the facts presented by the prosecution history. The Examiner's attention is again invited to consider the two features of claims 1-15 quoted by the Examiner described the method steps accompanying the "processing [of] a data address mark" as defined by method claims 1 and 7, and there accompanying dependent claims 2-6 and 8-10, and the operation of the transducer head assembly 6 as controlled by microcontroller 14, as is expressly defined by apparatus claim 11, together with its dependent claims 12-15. In contradistinction, Applicant's rejected claims 16-51 define different aspects and features of Applicant's invention, with apparatus claims directed to either the recording medium as defined by claims 20-23, 38, 39 or 40, or directed to the disk drive device as defined by claims 24, 25, 32-34, 41, 42, 43, 50, 51 and newly presented reissue

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claim 52. The two features of method claims 1 and 7 cited by the Examiner of "skipping a remaining data address" and the functional operational feature of claim 11 with "said transducer head not utilizing a remaining data address mark" cited by the Examiner have nothing to do with Applicant's reissue claims directed to either the recording medium or to the disk drive device itself. Either feature of "skipping a remaining address" or "said transducer head not utilizing a remaining data address mark" could not lawfully be incorporated into Applicant's apparatus claims directed to either the recording medium or the disk drive device, without creating an aggregation impermissible under the second paragraph of 35 U.S.C. §112. In short, the subject matter of method claims 1 and 7 and apparatus claim 11 of either "skipping a remaining data address" or "not utilizing a remaining data address mark" are not aspects of Applicant's reissue claims directed to the recording medium or of Applicant's reissue claims defining the disk drive device.

Turning to the reissue method claims, Applicant has presented three general categories of processes: one, a method of providing a data block defined by claims 16-19 and 35-37, and newly presented independent claims 53 and 54; two, a method of reading a data block defined by claims 26-30, 44, 45 and 46; and three, a method of preparing a memory disk defined by independent claims 31 and 47. The features of amended patent method claims 1 and 7 define "forming and processing a data address mark", while Applicant's first group of reissue process claims 16-19 and 35-37, which define a method of providing a data block, describe the step of "writing", rather than the step of "processing a data address mark" as defined by amended patent claims 1 and 7. The second group of reissue method claims 26-30, 44, 45 and 46 define a

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method of reading a data block, as opposed to "processing a data address mark" as defined by amended patent process claims 1 and 7 cited by the Examiner. Applicant's third group of reissue process claims, namely independent process claims 31 and 47 describe a method of preparing memory disk with one or more recording steps, as opposed to the "processing a data address mark" defined by amended patent process claims 1 and 7 cited by the Examiner.

In summary, Applicant's reissue claims are directed to different apparatus and to different methods than those defined by independent amended patent process claims 1 and 7, or independent amended disk drive apparatus claim 11. Consequently, recapture of any subject matter surrendered by the amendment of patent claims 1, 7 and 11 is not an issue here--the subject matter of the patent claims is wholly different from the subject matter of the apparatus and method reissue claims 16-54 now pending.

Fourth, the Examiner supports this rejection under 35 U.S.C. §251 by asserting that the amendment of claims 1, 7 and 11 in Applicant's patent surrendered "the broader scope" in "the application for patent", and that the broader scope "cannot be recaptured by the filing of the present reissue application." The Examiner relies upon decisions such as *Pannu v. Storz*, 258 F.3d 1366 (Fed. Cir. 2001) and *Hester Industries, Inc. v. Stein, Inc.*, 46 USP2d 1641 (Fed. Cir. 1998) to buttress the Examiner's assertion. In Paper No. 5 issued on the 30th of December 1998, the Examiner rejected claims 1, 7, 11 and 12 under 35 U.S.C. §102(b) as anticipated by Gold '545. Subsequently, in Applicant's responsive amendment filed on the 29th day of March 1999, Applicant "amended the independent claims 1, 7, and 11 to incorporate feature of allowable claims 2, 8, and 13, respectively." Additionally, Applicant expressly noted that there was no

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anticipation under 35 U.S.C. §102(b) “unless all of the elements of a claim are found in exactly the same situation and united in the same way in a single prior art reference, and thus every element must be literally present and must also be arranged as in the claim”, (See Paper No. 6, Pg. 8, and then explain that the Examiner “appears to be misapplying the facts to Gold ‘545 here” because “the first address mark (AM) is included within the ID header 22 and is not considered to be a *data* address mark” while the “second address mark (AM) is included within the *data* header 24 is considered to be a *data* address mark.” Applicant concluded the explanation of a lack of anticipation by explaining to the Examiner that “Gold ‘545 does not teach or suggest a recording of a data address mark in two locations, as set forth in Applicant’s independent claims 1, 7, and 11.” Applicant’s remarks, amendment of 29 March 1998, pg. 8. In summary, Applicant made no surrender, identified the impropriety of the Examiner’s anticipation rejection and in compliance with 37 CFR §1.111(a) and (b), pointed out the specific distinctions that rendered those claims patentable over Gold ‘545. The fact that Applicant identified the Examiner’s misapplication of the facts of Gold ‘545 does not constitute surrender of either the scope or breadth of the subject matter defined by claims 1, 7 and 11. Applicant presented no argument in the demonstration of the Examiner’s misapplication of Gold ‘545 that the amendment itself patentably distinguished any of the amended claims over Gold ‘545. Applicant instead presented a factual basis for the impropriety of the anticipation rejection of those claims based upon the language of claims 1, 7 and 11 as rejected. Consequently, there was neither argument nor amendment to narrow the scope of claims 1, 7 and 11 in order to overcome the prior art. Absent argument and amendment to overcome the prior art, there is no surrender.

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Amendment of claims 1, 7 and 11 for reason other than an effort to overcome the prior art is irrelevant in applying the doctrine of reissue recapture.

Specifically, in Paper No. 6 Applicant explained that although the Examiner had argued in Paper No. 5 that U.S. Patent No. 5,231,545 issued to Gold (hereinafter Gold '545) "teaches recording a data address mark in at least two different locations of the data track (fig. 1A)," the Examiner appeared to be misapplying the facts of Gold '545 because in FIG. 1A of Gold '545, the first address mark (AM) is included within the *ID* header 22 and is not considered to be a "data" address mark. The second address mark (AM) is included within the *data* header 24 and is considered to be a "data" address mark. In conclusion, Gold '545 does not teach or suggest a recording of a data address mark in two locations, as set forth in the applicant's independent claims 1, 7, and 11.

There is no anticipation under 35 U.S.C. §102 unless all of the elements in a claim are found in exactly the same situation and united in the same way in a single prior art reference, and thus every element must be literally present and must also be arranged as in the claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913, 1920 (CAFC 1989). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 165 USPQ 494, 496 (CCPA 1970), and the Manual of Patent Examining Procedure (M.P.E.P.) 2143.03. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Therefore, absence from the reference of any claimed element negates

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anticipation. *Kloster Speedsteel AB v. Crucible, Inc.*, 793 F.2d 1565, 230 USPQ2d 81 (Fed. Cir. 1986). See also M.P.E.P. 2131 and 35 U.S.C. §102.

To establish a *prima facie* case of obviousness, three basic criteria must be met. **First**, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. **Second**, there must be a reasonable expectation of success. **Third**, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See the *Manual of Patent Examining Procedure* (M.P.E.P.) §2143 and 35 U.S.C. 103. If the Examiner fails to establish a *prima facie* case, the rejection is improper and will be overturned. *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988).

Gold '545 does not set forth the each and every element of the claims 1, 7, and 11, as amended. Thus, Gold '545 does not anticipate the applicant's claims, as amended, and therefore Gold '545 does not support a rejection of claims under 35 U.S.C. 102. In addition, Gold '545 does not teach or suggest the features set forth in applicant's claims, such as the two *data* address marks and the skipping of one data address mark. Thus, Gold '545 does not support a rejection of claims under 35 U.S.C. 103. The additional cited prior art does not remedy the deficiencies of Gold '545. That is, Hirukawa '693, Otsuki '207, and Yamawaki '745 in combination with Gold '545 do not teach or suggest the aforementioned features of the applicant's claims, and thus do not support a rejection of claims under 35 U.S.C. §103. Consequently, absent surrender, the condition precedent to invocation of the doctrine of reissue recapture does not exist; withdrawal of this rejection is therefore required.

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P54757RE2**Conclusion**

The Examining staff seems to have ignored the guidance kindly provided by the special efforts of the Board of Patent Appeals and Interferences as may be found in, by way of example, the precedential *Ex parte Daniel M. Eggart, et al.*, Appeal No. 2001-0790, Serial No. 09/110,145, decided on the 29th of May 2003. A copy of that Opinion was previously enclosed by this Applicant for the Examiner's guidance. As explained in that Opinion, when the Applicant's claim 1 was "met by a final rejection", the Applicant had two options: "appeal the Examiner's final rejection" or "amend that claim in an attempt to define narrower, patentable subject matter." The Applicant in that Opinion "chose the latter option and amended claim 1 a second time" and, "upon consideration of claim 1 (twice amended), the Examiner determined that that was patentable." As further explained by the Board,

"due to the vagaries of using words to describe a mechanical object ... it is not unreasonable to conclude that errors can be made in choosing the most correct language to define the mechanical object in a way which is consistent with the invention described in the patent application and is patentable over the prior art."

Thus, "a patentee who believes he has claimed less than he has a right to claim in the patent through error without any deceptive intent may file an application for a reissue application." In the *Eggart* Opinion, the Board explained that the Applicant had never conceded that the broader scope of coverage provided by the reissue claims was unpatentable. Similarly, in the instant application and in the parent application, Applicant has never maintained and has advanced no action to suggest during the prosecution of the parent application that the difference in scope of coverage between the patent's issued claims and reissue claims 16 through 54, was

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“unpatentable.” As explained by the Board, “therefore, in our view, such subject matter is not barred by the recapture rule. In short, the absence of “skipping a remaining data address” and “said transducer head not utilizing a remaining data address mark” in the rejected reissue claims is irrelevant to the question of reissue recapture, where as in the *Eggart* Opinion, Applicant here simply chose to present amended claim 1 in view of the Examiner’s earlier indication of the allowability of dependent claim 2. Consequently, the requisite basis for a reissue recapture under 35 U.S.C. §251 is lacking. Withdrawal of this rejection is therefore respectfully requested.

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No fees are incurred by this paper.

In view of the above, all claims are deemed to be allowable and this application is believed to be in condition to be passed to issue. Reconsideration of the rejections and objections is requested. Should any questions remain unresolved, the Examiner is requested to telephone Applicant's attorney.

Respectfully submitted,



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